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ABSTRACT

The article describes the theoretical foundations of R. Feuerstein's "Mediated Learning Theory" and its applicability to deaf populations. The theory provides insight into the comparable characteristics of culturally deprived and deaf populations. The theory emphasizes the importance of mediated learning as a prerequisite to independent learning and thinking. The construct is applied to hearing parents and their deaf children. Investigations centering on deaf students' involvement with two of Feuerstein's processes for facilitating performance of culturally deprived individuals, referred to as the Learning Potential Assessment Device and the Instrumental Enrichment, an educational intervention procedure, are described. A 39-item reference list is included. (CL)

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APPLICATION OF FEUERSTEIN'S MEDIATED LEARNING CONSTRUCT TO DEAF PERSONS

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Abstract

Feuerstein's (1979; 1980) theoretical construct of Mediated Learning Theory concerning the etiological nature of cultural deprivation may apply also to certain deaf populations. This article describes the theoretical foundations of "Mediated Learning Theory" and its applicability to deaf populations. It also reports preliminary investigative data on assessment of deaf subjects when exposed to mediated treatment.

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Introduction

In describing the manifest functioning of the deaf population, Levine (1976) states that because of experiential deprivation, both linguistic and nonlinguistic, the deaf "mirror" the performance of a culturally disadvantaged or deprived group. This contention is supported by other researchers. Schlesinger and Meadow (1972), Meadow (1980), and Sarlin and Altshuler (1978), for example, have observed similarities between these two populations in certain aspects of psychological adaptation and attainments. In terms of behavioral characteristics, various researchers (Altshuler, 1964; Altshuler, Deming, Vollenweider, Rainer, & Tendler, 1976; Levine, 1956; Sarlin & Altshuler, 1978; Myklebust, 1960; Rainer, Altshuler, Kallmann, & Deming, 1969) have noted that deaf children demonstrate higher degrees of impulsivity, egocentricity, dependency, suggestibility, lack of thoughtful introspection, and immaturity in caring for others. Academic retardation is also evident in both groups (Bonvillian, Charrow & Nelson, 1973; Furth, 1966; Tomlinson-Keasey & Kelly, 1978; Goetzinger & Rousey, 1959).

A question that arises from comparison of these two diverse groups relates to the etiological nature of the cognitive/affective behaviors themselves. Why would persons with a major sensory loss acquired either congenitally or prelingually, manifest similar behaviors to those individuals who are sensorially intact but suffer primarily economic deprivation? The answer to this question may lie not only in the dearth of experiences available to these two populations, but also in the type of experience of which these two groups are deprived. Direct experience with objects and events may be more readily available to the general deaf population than to the economically deprived population, since the former came from the entire economic spectrum whereas the latter are a specified economic subgroup. Although the equity of the two groups in regard to this realm of experience remains questionable, the differences, if they do exist, do not seem to lead to

differential levels of functioning between the two groups. As a result, the sheer number of experiences in and of themselves may not be the mitigating factor in obviating the behavioral characteristics noted above.

Mediated Learning Theory

Feuerstein (1979; 1980) proposes a theoretical construct titled "Mediated Learning Theory" which may provide insight into the comparable characteristics between culturally deprived and deaf populations.

According to Feuerstein and Rand (1977), "the organism develops through two major modalities: (1) maturational and growth processes built into the system of the organism itself, and (2) interaction with its environment" (p. 109). In viewing the latter source of development, they distinguish between two categories of learning: (1) learning through direct exposure, and (2) learning through mediated exposure. Through direct exposure, the individual from the earliest stage of life is affected by stimuli that impinge upon him/her. Thus, direct learning experience "transforming as it does the organism's reactions, is to be equated with learning because of the lasting effects it produces in the behavioral repertoire of the organism" (p. 110). In mediated exposure, direct experience with the stimuli is altered through the action of an "experienced, intentioned, and active human being" (p. 110). By situating himself/herself between the stimulus and the individual, this caring human "mediates the stimuli (verbally and nonverbally) in such a way that each stimulus is changed as it reaches the organism" (p. 110). Through a repertoire of actions, such as selecting stimuli for exposure, framing environmental events, focusing the individual in terms of salient aspects, provoking anticipatory behaviors, and feeding back environmental experiences, the experienced person transmits appropriate learning sets and habits in the developing individual (Feuerstein, 1979). Central to mediated learning

experience is the "intentionality" of the intervening person. By intentionally mediating the meaning of experience, the specific content of an action is transcended and over time a process for learning is established. In this way, the intentioned adult orients and organizes the phenomenological world for the child. Such mediation "occurs at a very early stage at the preverbal level and continues into early childhood on verbal levels in those areas that are novel to the organism" (Feuerstein & Rand, 1977, p. 110).

In this theoretical approach, both modalities of learning, i.e., direct learning and mediated learning, are perceived as essential to development. However, the contention is that through mediated learning, the ability of the individual to benefit from direct experience is not only enhanced but essential for continued direct exposure learning. The importance of mediated learning experience is underscored by Feuerstein as a "prerequisite to effective, independent, and autonomous use of environmental stimuli by the child...and to the development of an attitude toward thinking and problem-solving that is actively and efficiently involved in organizing the world of stimuli impinging on the individual from both internal and external sources" (1979, pp. 71-72)

Effect of Insufficient Mediated Learning Experience

Insufficient mediated learning exposure results in cultural deprivation, i.e., an alienation from one's own culture, marked by a significant reduction in the ability of an individual to adapt and become modified by his/her own culture. This alienation may be produced by a number of determinants, including sociological, geopolitical, psychophysical, and cultural conditions (Feuerstein, 1979). Feuerstein (1979) stresses that the concept of cultural deprivation in this framework "refers to an intrinsic criterion of the specific culture, namely the lack of the process inherent to the concept of culture itself: intergenerational transmission" (p. 39). In formulating this definition, Feuerstein (1979) rejects

the more commonly accepted referent of an "extrinsic criterion by which the culture of certain ethnic subgroups is considered as depriving their members, thereby negatively affecting their cognitive capacities" (p. 39). Culture itself in the philosophy of mediational learning cannot be viewed as a depriving factor.

Feuerstein and Rand (1977) offer two factors to explain lack of mediated learning: (1) an environment that fails to mediate the world to a child, and/or (2) the child himself/herself produces barriers to attempts at mediation. Regardless of the causative aspects of insufficient mediated learning, the most salient result is that it leaves the individual a passive receiver of information, an individual centered primarily with an external locus of control, and one who has a "limited capacity to become modified through direct exposure and experience, perceptual, motor, and emotional" (p. 111). In observing the manifestations of the mental actions of such individuals, a host of cognitive deficiencies may be observed at the input, elaborational, and output levels of the process. However, Feuerstein (1979) contends, and has found support in his research, that "a great part of the low performance manifested by disadvantaged populations does not reflect poor elaborative thought processes but is determined by other variables such as deficient functioning at the input or output phases" (p. 306). For this reason it may be possible to observe dramatic positive changes in performance through a relatively short intervention involving mediational interaction.

Mediated Learning Theory and the Deaf

Levine (1981) notes that "a common misconception about prelinguistic deafness is that it reduces all its victims to one common denominator. This is not the case; far from it" (p. 155). In this statement, Levine emphasizes the heterogeneity among profoundly deaf persons. The fact that many profoundly deaf individuals demonstrate high levels of cognitive functioning as measured by the culture-at-large attests to a potential that is not precluded by the sensory loss alone.

However, over 90% of deaf children are born to hearing parents and for a majority of these parents, it is their first encounter with the handicap of deafness (Schlesinger & Meadow, 1972). Mindel and Vernon (1971) cite guilt, anger, grief, and repression as stages through which parents normally pass in coping with the reality of having a hearing-impaired child. As the nurturing agents in the environment of the deaf child, the nature of the parents' coping mechanism may cause a significant disruption or reduction in the mediational learning process, i.e., where the organization of environmental stimuli is not interpreted for the child. Also, as a hearing person, the adaptative response to the environment is through an integrated sensory network with audition playing a central role in the orienting framework. Hearing parents are faced with the dilemma of trying to mediate the world to their deaf child visually when they are not singularly visually-oriented themselves.

In general, hearing parents of deaf children exhibit a greater degree of trauma than deaf parents in accepting their deaf child, more conflict concerning child-rearing practices, and significantly more difficulty in establishing a communication system with their deaf child (Schlesinger & Meadow, 1972). Studies focusing on deaf children of hearing parents suggest lower performance levels in written language, reading, vocabulary, and fingerspelling than deaf children born to deaf parents (Quigley & Frisina, 1961; Stuckless & Birch, 1966; Vernon & Koh, 1970). Deaf children of hearing parents also demonstrate comparative weaknesses in the areas of positive self-image and social adjustment in comparison to deaf children of deaf parents (Meadow, 1980), exhibit less impulse control (Harris, 1978), and manifest lower scores on traditional tests of intellectual ability (Brill, 1969; Ray, 1979).

In applying Feuerstein's (1979) theoretical construct of mediated learning to the deaf population as a whole, it would appear that hearing parents may be more

disadvantaged than are deaf parents in terms of intergenerational transmission. This difference may be so, not only because of a communication facility and a better acceptance of the condition of deafness, but also because deaf parents would be more adept at visually orienting the mediational aspects of learning for their children. Feuerstein and Rand (1977) state that mediated learning experience is not limited to specific language or content. Rather, it is the "intentionality" on the part of the mediator that plays the key role.

The comparative performance characteristics between deaf children of hearing parents and deaf children of deaf parents lends support to Meadow's (1980) and Levine's (1981) hypothesis that deafness causes the "caring others" in the environment to react in such a way as to promote a more maladaptive interaction pattern between hearing parents and their deaf children, thus causing a disruption in cultural transmission. As Chess (1975) indicates, "the deaf child is doubly deprived, the first deprivation arising from his deafness and the second from the effect of his handicap upon the environment" (p. 150). To translate this statement into Feuerstein's terms, by virtue of his/her sensory deprivation, the child faces a barrier to attempts at mediation which in turn promotes an environment that is incapable of mediating the world of objects and events in the most beneficial way to the deaf child. Thus, the causative factors of cultural deprivation would appear to be cyclical in nature in relation to the deaf child and his/her environment.

As the deaf child's world expands into the realm of schooling, the causative factors of cultural deprivation may persist. Levine (1981) states that deaf children are more dependent upon formal schooling than hearing children because they have less access to informal, out-of-school input. However, she criticizes formal education of the deaf for its limitation "in opportunities for independent thinking and for developing mental initiatives and controls" (p. 142). Putnam in

1896 criticized educators for treating deaf children as "receptacles of facts, rules, etc." (p. 269) and Leitman, in 1968, echoed this statement by indicating that the approach used to educate the deaf child tends to foster a kind of passivity. This critical view is supported in interaction studies (Craig & Collins, 1970; Wolff, 1977) which indicate that an inordinate amount of classroom time is spent in teacher-dominated talk, with the level of questioning remaining primarily at a fact-response level. As the deaf child advances in school but maintains a low level of academic achievement as compared to his/her hearing peers, teachers may, out of frustration and feelings of discouragement, lower their expectations (Meadow, 1980); may restrict the levels of experience available to the children (Liben, 1978); and may, in essence maintain Myklebust's (1960) notion of the "deaf as concrete" (Ray, 1979). Such an environment may serve to reinforce the behaviors associated with an external locus of control, i.e., passivity, dependency, and a lack of responsibility for one's own behavior (Quigley & Kretschmer, 1982); and with learned helplessness, i.e., underachievement and a lack of initiative to attempt tasks if they are perceived as difficult (McCrone, 1979). Feuerstein (1979) cites these behaviors as related to a lack of or paucity in mediated learning exposure, i.e., that the culturally deprived child is observed to be a passive recipient of information rather than an active generator of knowledge.

Application of Mediated Learning Construct

Feuerstein (1979; 1980) provides two processes for facilitating performance of culturally deprived individuals (i.e., those individuals manifesting reduced modifiability). The first process is a diagnostic one referred to as the "Learning Potential Assessment Device" (LPAD); the second process is an educational intervention procedure titled "Instrumental Enrichment" (IE).

As a process-oriented assessment procedure, the intent of the Learning Potential Assessment Device (LPAD) is to determine the "extent and means by which the level of an individual's functioning can be modified rather than described" (Feuerstein, 1979, p. 121), and to determine if the difficulties involve primarily elaborative thought processes, or difficulties at the input and/or output levels of processing. As such, the LPAD approach is, in its instrumentation and test environment, clinical in nature; the examiner probes to determine the sources of cognitive problems that may impair performance on the instruments and attempts to mediate them in the assessment situation.

Feuerstein (1979) in his work, primarily with retarded-functioning adolescents, has demonstrated high degrees of modifiability or potential, among the populations he has studied. In a recent study with a preadolescent profoundly deaf population (CA 9-13) Keane (1983) and Keane and Kretschmer (submitted) found that an experimental group exposed to mediated intervention on an LPAD battery performed significantly better ($p < .01$) than a comparison group that received the instruments according to traditional psychometric procedures, and another comparison group that received limited feedback concerning task performance. Further, this research also involved a pretest-posttest design to investigate the pervasiveness of mediational intervention, i.e., the transfer of learning; the experimental group receiving mediated treatment demonstrated significant transfer of learning within defined cognitive and behavioral parameters.

Cognitive/intellectual assessment procedures which are more sensitive to the needs of deaf individuals need to be generated within the field. This notion is supported by a number of researchers (Carlson & Dillon, 1978; Dillon, 1979; 1980; Gerweck & Ysseldyke, 1975) who contend that traditional psychometric procedures "often yield insensitive indicators of cognitive levels" (Dillon, 1979, p. 364). Gerweck and Ysseldyke (1975) emphasize further that the "acculturation of hearing-

impaired individuals is significantly different from that of non-hearing-impaired individuals" (p. 244) and therefore, a basic underlying assumption of traditional psychometric procedures is compromised. As noted, Keane (1983) found the LPAD to be a significant measure of cognitive potential in the deaf population he studied. These results support the use of the LPAD as an alternative, or at least an additional, cognitive assessment procedure.

Since the LPAD is a short-term procedure, it is assumed, and has been demonstrated by Feuerstein's (1979), Keane's (1983), and Keane and Kretschmer's (in progress) research, that generalizability after treatment is limited to tasks that resemble those that were involved within the mediated learning treatment. However, the assumption underlying investigation of cognitive potential in this way is that if modifiability can be made evident in such a time-limited procedure, then the difficulties that arise in performance would reside primarily in the peripheral levels of the mental act; and, through appropriated educational intervention, the modification of deficient cognitive structures may become more permanent and performance may generalize to unrelated tasks. For this purpose, "Instrumental Enrichment" was developed (Feuerstein, 1980). Based upon the tenets of mediated learning theory, this curriculum serves as a long-term procedure with the purpose of enhancing the cognitive modifiability of culturally deprived individuals. At this time, a few schools for the deaf are involved in implementing this curriculum with certain deaf populations, and preliminary results with this program are becoming available elsewhere (cf. papers in this volume by Martin, and Jonas & Martin).

Conclusion

Feuerstein's (1979; 1980) theoretical construct (Mediated Learning Theory) concerning the etiological nature of cultural deprivation may apply also to

certain deaf populations. Initial studies on the cognitive modifiability of a deaf population indicate high degrees of modifiability for this population when exposed to mediated treatment (Keane, 1983; Keane & Kretschmer, submitted), as well as a transfer of learning for this group along cognitive and behavioral parameters (Keane, 1983; Keane & Kretschmer, in progress). In terms of educational practice, these findings indicate a level of potential that is not evidenced in academic performance within this population. In special education, diagnosis is the key to developing curricula which are appropriate to the needs of the individual. Diagnostically, initial studies show that cognitive deficiencies, similar to those delineated by Feuerstein (1979) with other populations, are evident within the deaf population studied. It would seem that the pervasiveness of these deficiencies affects the learning ability of these deaf children. To an educator, in approaching the complex phenomenon of learning, it appears logical that these deficiencies which affect the mental act need to be addressed before further learning can occur. To facilitate this task, more research is needed. Further validation is needed of Feuerstein's (1979; 1980) theoretical construct of mediated learning theory as it applies to the deaf population, through research on the use of LPAD and Instrumental Enrichment; such investigation could impact upon educational curricula, pre-service and in-service teacher education, cognitive/intellectual assessment, and finally parent-infant education programs which serve deaf children.

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